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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,624	10/03/2003	Seiichi Kawano	JP920020163US1	9411

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LENOVO (US) IP Law
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EXAMINER
HOANG, DANIEL L

ART UNIT	PAPER NUMBER
2136	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
Office Action Summary	10/678,624	KAWANO ET AL.
	Examiner	Art Unit	
	Daniel L. Hoang	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/03/03, 1/26/04, 11/03/06*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☒ All   b)☐ Some *   c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *1/16/04, 11/03/06*.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

CLAIMS PRESENTED

Claims 1-16 are presented.

CLAIM REJECTIONS

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1.   Claims 1 and 15 recite the limitation "the operating system read into said main storage unit" in line 8. There is insufficient antecedent basis for this limitation in the claim. The claim states that an executable program for the operating system from the hidden partition is read to a main storage unit. For purposes of examination, examiner interprets the claim as reading as such: "an execution unit which executes the executable program read into main storage unit." Appropriate correction is required.

2.   Claim 14 recites the same limitation as claims 1 and 15 above. Examiner is interpreting said claim in the same way that claims 1 and 15 have been interpreted above. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by

Drew, US Patent No. 6,360,945.

As per claims 1 and 14-16, Drew teaches:

Apparatus, comprising:

an external storage device having a normal partition which can be referred to by a user and a hidden

partition storing an executable program for an operating system and hidden from the user;

> *[see col. 2-3, lines 66-67 and 1-3] "In the present invention we have now included a Security Partition above the area where the standard partition entry information is placed, utilizing space within the Partition Table Sector, so that it will not be recognized by the normal operating system as a hidden partition."*

> *[see col. 3, lines 10-12] "This hidden partition can then contain proprietary code and information used to implement secure access to the system software and data."*

a reader which reads the executable program for the operating system from the hidden partition to a main

storage unit in response to a direction for reading the program from the user; and

> *[see fig. 6b]*

an execution unit which executes the executable program read into said main storage unit.

> *[see col. 3, lines 37-40] "Access to which would only be achieved through special proprietary software and firmware routines. The motherboard BIOS could also be modified to include special routines to access the hidden partition to validate security data before allowing the system to boot."*

As per claim 2, Drew teaches:

Apparatus of claim 1, wherein said reader transmits a predetermined password to said external storage

device to permit said external storage device to read the hidden partition.

> *[see rejection of claim 1, "validate security data"]*

Claims 1 and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Ding,

US Patent No. 6,430,663.

As per claims 1 and 14-16, Ding teaches:

Apparatus, comprising:

an external storage device having a normal partition which can be referred to by a user and a hidden

partition storing an executable program for an operating system and hidden from the user;

> *[see col. 4, lines 24-27] "Methods are provided to enable booting from a copy operating system (OS) stored in a different partition from the original OS, so a single hard disk drive can have two copies of the OS in different partitions to be selected to boot from."*

> *[see col. 4, lines 35-37] "using an original boot partition of the hard disk drive, the partition having the copy OS is not visible to the computer user."*

> *[see col. 6, lines 17-20] "the Rezoom partition simply holds a copy of the operating system and all . other files necessary to make the Rezoom partition a fully operational boot partition."*

a reader which reads the executable program for the operating system from the hidden partition to a main

storage unit in response to a direction for reading the program from the user; and

> *[see fig. 4]*

an execution unit which executes the executable program read into said main storage unit.

> [see col. 8, lines 20-27] *"This is important in cases where the original boot partition C: were to crash and the user desires to keep working. In such a case, the user can simply select to boot from the Rezoom partition. To the use, since the data will be stored in the D: partition or another any other location, the system will simply boot up flawlessly. Thus user can therefore continue to work uninterrupted and address the failure at a later time."*

Claims 1, 2 and 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by

Kumagai, US PGP No. 20040182547.

As per claims 1 and 14-16, Kumagai teaches:

Apparatus, comprising:

an external storage device having a normal partition which can be referred to by a user and a hidden

partition storing an executable program for an operating system and hidden from the user;

> *[see fig. 2, elements 33 and 34]*

a reader which reads the executable program for the operating system from the hidden partition to a main

storage unit in response to a direction for reading the program from the user; and

[see paragraph 0042, "BIOS 191]

an execution unit which executes the executable program read into said main storage unit.

[see paragraph 0049, "switching program"]

As per claim 2, Kumagai teaches:

Apparatus of claim 1, wherein said reader transmits a predetermined password to said external storage

device to permit said external storage device to read the hidden partition.

[see fig. 2, element 191]

Claims 1, 2 and 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by

Milne et al, US Patent No. 6,711,660.

As per claims 1 and 14-16, Milne teaches:

Apparatus, comprising:

an external storage device having a normal partition which can be referred to by a user and a hidden

partition storing an executable program for an operating system and hidden from the user;

[see fig. 3, elements 100, 106, and 108]

a reader which reads the executable program for the operating system from the hidden partition to a main

storage unit in response to a direction for reading the program from the user; and

[see fig. 4, "disk controller"]

an execution unit which executes the executable program read into said main storage unit.

[see fig. 4, element 130]

As per claim 2, Milne teaches:

Apparatus of claim 1, wherein said reader transmits a predetermined password to said external storage

device to permit said external storage device to read the hidden partition.

[see fig. 4, element 128]

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 3-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milne as

applied to claim 1 above, and further in view of Dong, US Patent No. 5,696,897.

As per claim 3:

Apparatus of claim 1, wherein the operating system is a sub-operating system which is activated in a time

period shorter than that required to activate a main operating system which runs in the apparatus when

the user has not made the direction, and said reader reads the executable program for the sub-operating

system from the hidden partition hidden from the main operating system.

The Milne reference has been discussed above. Milne does not teach that the sub-operating

system is activated in a time period shorter than that required to activate a main operating system.

Dong teaches well-known techniques allowing operating systems to boot up in a shorter time.

[see col. 1, lines 13-34]

It would have been obvious at the time of the invention to one of ordinary skill in the art to which

the subject matter pertains to modify the Milne invention to incorporate the above teachings of Dong. The

Milne invention teaches performing diagnostics to repair an operating system. It would be advantageous

to have a short boot up time in such a case where an operating system crashes and a user needs

immediate access to a sub-operating system in order to resume computer usage as soon as possible.

As per claim 4:

Apparatus of claim 1, wherein the operating system is a sub-operating system having a power

consumption per unit time lower than that of a main operating system which runs in the apparatus when

the user has not made the direction, and said reader reads the executable program for the sub-operating system from the hidden partition hidden from the main operating system to said main storage device.

The Milne reference has been discussed above. Milne does not teach that the sub-operating system has a power consumption unit lower than that of a main operating system.

Dong teaches well-known a technique for operating systems to consume less power.

[see col. 1, lines 35-40]

It would have been obvious at the time of the invention to one of ordinary skill in the art to which the subject matter pertains to modify the Milne invention to incorporate the teachings of Dong so that while the user is performing diagnostics on the computer system, less power is being used in order to conserve more power to be used during normal operation.

As per claim 5, Dong teaches:

A suspend unit which stops the operation of the main operating system and saves the sate of execution of the main operating system to a save area when receiving a direction for suspension from the user during execution of the main operating system.

> *[see col. 2, lines 1-4] "The present invention provides a method and apparatus that suspends all activity in a computer system rapidly and saves the state of computer operating system such that the computer system may be suspended quickly."*

As per claim 6, Dong teaches:

Apparatus of claim 5, wherein said suspend unit shifts the main operating system to the suspended state when receiving a switching direction for switching from the main operating system to the sub-operating system, and said reader reads the executable program for the sub-operating system to said main storage device by recognizing the reception of the direction for reading when the main operating system enters the suspended state.

> *[see fig. 4, step 2, "SIGFREEZE signal"]*

As per claim 7, Dong teaches:

Apparatus of claim 6, further comprising a resume unit which restores the state of execution of the main

operating system from the save area and resumes the execution of the main operating system when the

execution of the sub-operating system is completed.

> *[see col. 2, lines 25-35] "To resume operation of the suspended computer system, similar steps are performed in the reverse order. First, the computer system state that was stored onto a nonvolatile storage device is read back into main memory. Each of the device drivers are then reactivated. Each device driver restores the state of its associated hardware device. Next, the various kernel daemons and operating system subsystems are reactivated. Finally, each user application process is reactivated and informed that the computer system was just brought back up from a rapid suspend."*

As per claim 8, Dong teaches:

Apparatus of claim 5, wherein said suspend unit saves the state of execution of the main operating

system to the save area provided in the hidden partition.

> *[see rejection of claim 5]*

As per claim 9, Dong teaches:

Apparatus of claim 5, further comprising a device driver executed on the main operating system, said

device driver requesting the main operating system to assign part of the main storage device as the save

area; wherein said suspend unit saves the state of execution to the save area assigned by said device

driver.

> *[see col. 2, lines 18-23] "Finally, each device driver running on the computer system is instructed to save the state of associated hardware devices. After saving the associated hardware device state, each device driver is suspended such that there is no longer any activity in computer system."*

As per claim 10, Dong teaches:

Apparatus of claim 5, wherein said suspend unit secures the save area in an NVS (Non-Volatile-Sleeping)

area by using an ACPI function provided in the apparatus.

> *[see co.. 2, lines 9-12] "The method also swaps out the memory space used by each user application process onto nonvolatile storage to reduce the amount of memory that must be saved later."*

Apparatus of claim 5, wherein said suspend unit uses as the save area a

As per claim 11, Dong teaches:

Apparatus of claim 5, wherein said suspend unit uses as the save area a video memory used for on-screen display by the apparatus.

[see fig. 6]

As per claim 12, Dong teaches:

Apparatus of claim 11, wherein said suspend unit uses as the save area an unused area not used by the sub-operating system in said video memory.

[see fig. 6]

As per claim 13, Dong teaches:

Apparatus of claim 5, wherein said suspend unit uses as the save area a storage area powered off to lose stored contents when the main operating system is in the suspended state and when the sub-operating system is not started.

> *[see col. 1, lines 40-44] "The memory refresh technique of FIG. 1a can only work for a limited time duration, and when the power in battery 28 is eventually depleted, all the system state information stored in the DRAM main memory will be lost."*

CONCLUSION

The art made of record and not relied upon is considered pertinent to applicant's disclosure.

POINTS OF CONTACT

*.   Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulaney Street
Alexandria, VA 22314

*.   Any inquiry concerning this communication or earlier communications from the examiner should

be directed to Daniel L. Hoang whose telephone number is 571-270-1019. The examiner can normally

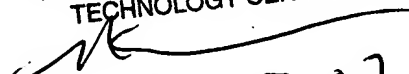be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Nasser Moazzami can be reached on 571-272-4195. The fax phone number for the organization where

this application or proceeding is assigned is 571-273-8300.

*Information regarding the status of an application may be obtained from the Patent Application
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Daniel L. Hoang
3/15/07

NASSER MOAZZAMI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

3/15/07